DOCUMENT RESUME

ED 474 319 CE 084 633

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TITLE	Implementing SCANS. Highlight Zone: Research @ Work.
INSTITUTION	National Dissemination Center for Career and Technical Education, Columbus, OH.
SPONS AGENCY	Office of Vocational and Adult Education (ED), Washington, DC.
REPORT NO	NDCCTE-10
PUB DATE	2003-00-00
NOTE	11p.
CONTRACT	V051A990004
AVAILABLE FROM	For full text: http://www.nccte.org/publications/infosynthesis/highlightzone/hig hlight10/index.asp. For full text: http://www.nccte.org/ publications/infosynthesis/highlightzone/hig hlight10/ highlight10-SCANS.pdf.
PUB TYPE	Information Analyses (070)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	Academic Achievement; Adult Education; Basic Skills; *Competency Based Education; Curriculum Design; Curriculum Evaluation; Definitions; Demonstration Programs; *Education Work Relationship; *Employment Potential; Experiential Learning; Instructional Effectiveness; Instructional Material Evaluation; *Integrated Curriculum; Interpersonal Competence; Job Performance; Job Skills; Job Training; Labor Force Development; Labor Needs; Learning Theories; Literature Reviews; Partnerships in Education; Postsecondary Education; Program Evaluation; *Program Implementation; Secondary Education; Teaching Methods; Theory Practice Relationship; Thinking Skills; *Vocational Education
IDENTIFIERS	Career and Technical Education; *Secretarys Comm on Achieving Necessary Skills

ABSTRACT

Foremost among efforts over the last decade to improve the work-related skills required of all young people to meet the demands of American's workplaces was the Secretary's Commission on Achieving Necessary Skills Commission (SCANS). Integral to SCANS were its three-part foundation (basic skills, thinking skills, and personal qualities) and these five competency domains: interpersonal; systems; planning; communication and information; and technology. Implementers have used different tools in different combinations. For instance, high schools (including Baltimore City Public Schools) and community colleges (supported by the National Science Foundation through its Advanced Technological Education program) have developed SCANS CD-ROM-based curricula and developed teachers' abilities to implement SCANS, including the ability to assess students' demonstration of SCANS competencies. Career academies (including the National Academy Foundation, whose programs include mandatory summer internships that reinforce SCANS skills) and joint labor-management technical education programs for incumbent union workers have aligned existing curricula with SCANS standards, developed teachers' and trainers' skills at using a performance-based assessment instrument that assesses each skill within the context of a task in a project, and deposited assessment output into an

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online repository. Such a repository is also used by youth opportunity centers such as that in Baltimore. SCANS implementation at seven community colleges around the country has helped the Welfare to Work endeavor by identifying SCANS skills needed by Temporary Assistance for Needy Families (TANF) participants and working with both participants and their job supervisors. (Contains 37 references.) (AJ/CL)

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Highlight Zone: Research @ Work No. 10

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2003

Implementing SCANS

by Arnold C. Packer and Scott Brainard

A variety of organizations use the Secretary's Commission on Achieving Necessary Skills Commission (SCANS) competencies and foundation skills as a curriculum foundation for secondary and postsecondary CTE and work force development. This Highlight Zone describes useful practices in assessing existing instruction, planning inclusion of SCANS, applying SCANS both in individual programs and across the curriculum, and preparing instructors to integrate competency-based instruction in SCANS.

Introduction

Much of the drive to teach and assess employability skills comes from concerns about this country's ability to remain competitive in the world economy. Recent research (The Aspen Institute 2002) shows that, in addition to a changing economy, we are also facing many other challenges such as decreased growth in the native-born work force and an increase in foreign-born workers, a decrease in growth in both high school and college graduation rates (Barton 2002), and an ever-growing gap in the skill level and wages earned between the highest and lowest skilled workers (Krugman 2002).

The Aspen Institute report warns: "Without a dramatic change in the way we train and support workers, we will fall short of finding the highly skilled, adaptable, and technologically sophisticated labor force we need to compete in the future global economy" (p. 12). This research highlights the critical need for improved methods for teaching and assessing employability skills in the emerging work force.

More than a decade ago, seminal work by Johnston and Packer (1987) and Carnevale, Gainer, and Meltzer (1990) was followed by efforts by both public and private agencies to improve the work-related skills of those already in and those just entering the work force. Foremost among these were the efforts of the SCANS Commission. The Secretary's Commission on Achieving Necessary Skills Commission published its final report in 1992. Since then, numerous schools and training organizations have "implemented" SCANS recommendations. Some did no more than apply a new label to what they were already doing; others, however, went much farther. The latter group's experience generated some lessons that can be useful to new implementers.

The SCANS Commission

In 1990, then U.S. Secretary of Labor Elizabeth Dole chartered, and her successor Lynn Martin continued, the Secretary's Commission on Achieving Necessary Skills. The goal was promoting a high-performance economy characterized by high-skill, high-wage employment. The commission began by defining critical skills that everyone needs in order to succeed in the work force and, indeed, in life. Called the SCANS skills, these competencies were then compiled in a document titled ***What Work Requires of Schools: A SCANS Report for America 2000*** (SCANS 1992).

The SCANS report defined the requirements for a high-performance workplace as—

- Basic skills, such as computation and literacy
- Higher-order skills such as learning to learn
- Personal qualities such as responsibility
- The ability to use this knowledge to solve workplace problems

High-performance workers solve problems in five domains: interpersonal, systems, planning, communication and information, and technology (see Table 1 on p. 2).

The commission's signal contribution was a language that could be used at work and school. The language is enduring and useful at various stages in anyone's career. Take the first workplace domain for example. The Pharaohs had some planning for resources when they built the pyramids, and the need for planning will exist for the foreseeable future. The domain of computers (C8 in Table 1) is more recent; acquiring, organizing, interpreting, and communicating information are old and enduring problems. The same is true of the technology problem domain even if the Pharaoh's technology is not ours.

To change the relationship between school and work, the commission spoke to three audiences. The SCANS report asked students, teachers, and employers to look beyond the classroom, the schoolhouse, and the workplace and envision a system in which all participants are involved with learning a living. It recommended that—

- Schools and colleges impart greater competencies in the SCANS skills areas
- Employers integrate them into the work environment for higher productivity
- Students realize that higher skills are the foundation for higher earnings

SCANS Implementation: A Theoretical Background

To stay competitive in the 21st-century economy, businesses, employees, and students must constantly learn and upgrade their skills and take on increased responsibility. A "knowledge economy" needs new approaches to learning, from online courses that bring the workplace into the classroom to classrooms designed to be a place for acquiring real workplace competencies.

Students cannot succeed without a strong academic foundation in basic skills such as reading, writing, communication, and math. They must have a broad range of knowledge, and they must understand and be able to apply that knowledge, regardless of their career interests. Foundation skills can be divided into three components. The first component is made up of the basic skills of reading, writing, arithmetic, mathematics, listening, and speaking. The second com-

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Table 1: SCANS Five Problem Domains and Three-Part Foundation Learning

Workplace Problem Domains

Planning for Resources

C1. Time—sets relevant, goal-related activities, ranks and allocates time
C2. Money—uses or prepares budgets, keeps detailed records
C3. Material—acquires, stores and distributes materials, supplies, etc.
C4. Human Resources—assesses skills and distributes work

Information

C5. Acquires—identifies need for data, obtains and evaluates
C6. Organizes—organizes, processes, and maintains information
C7. Interprets—selects, analyzes information and communicates results
C8. Uses Computers—to acquire, organize, analyze, and communicate information

Interpersonal Skills

C9. Participates as a member of a team—contributes to group effort
C10. Teaches Others— helps others learn needed knowledge and skills
C11. Serves Clients/Customers—works to satisfy client/customer expectations
C12. Exercises Leadership—communicates ideas to justify position and lead others
C13. Negotiates—works toward agreements involving an exchange of resources
C14. Works with Diversity – works well with people from diverse backgrounds

Systems

C15. Understands Systems—social, organizations, and technological systems
C16. Monitors—distinguishes trends, predicts impact
C17. Improves/designs—modifies existing systems, designs new ones

Technology

C18. Selects—judges which technology will produce desired results
C19. Applies—understands procedure for setup and use of machines
C20. Maintains—prevents, identifies or solves technological problems

Foundation Skills

Basic Skills

F1. Reading—locates, understands and interprets written information
F2. Writing—communicates thoughts, ideas, information in writing
F3. Arithmetic—performs basic computations
F4. Mathematics—chooses appropriate mathematical techniques
F5. Listening—receives, interprets, and responds to verbal messages and cues
F6. Speaking—organizes ideas and communicates orally

Thinking Skills

F7. Creative Thinking—generates new ideas
F8. Decision Making—specifies goals and constraints, chooses best alternatives
F9. Problem Solving—recognizes problem and devises/implements a solution
F10. Mental Visualization—thinking about what something will be
F11. Knowing How to Learn—uses efficient learning techniques
F12. Reasoning—discovers and applies underlying rules or principles

Personal Qualities

F13. Responsibility—exerts a high level of effort and perseveres towards goals
F14. Self-esteem—believes in oneself and maintains a positive view of self
F15. Sociability—demonstrates to others that you care about them
F16. Self-management—assesses self accurately, sets goals, exhibits self-control
F17. Integrity/Honesty—chooses ethical courses of action

ponent consists of thinking skills, which include creative thinking, decision making, problem solving, mental visualization, knowing how to learn, and reasoning. The third component addresses the development of personal qualities such as responsibility, self-esteem, sociability, self-management, and integrity (Packer and Pines 1996).

Indeed, as described in ***Employability Skills: An Update*** (Overtoom 2000), publications such as ***The Forgotten Half Revisited*** (Halperin 1998) revealed that a majority of high school students leave school without a solid base of academic and SCANS skills that will enable them to succeed in further education or career employment. Employability skills have not traditionally been "directly taught" in schools (Grubb et al. 1992; Halperin 1998). Teaching and learning these skills are consistent not only with the emerging needs of a world economy in a high-performance work environment but also the future academic success of the students.

Research has focused on optimal learning principles and ways in which instruction can be most beneficial to students. A major theme in constructivist learning theory is that learning is an active process in which learners construct new ideas or concepts based upon their current/past knowledge (Bruner 1990; Bybee and Sund 1982). In addition, this theory asserts that the most effective way to learn is through active experimentation with one's environment. Learning through doing is the mantra. Contextual learning experiences are touted as the most advantageous. The SCANS instruction is grounded in constructivist learning theory.

Experience with learning transfer shows that, in order for skills acquired in schools to be applied in the workplace, school-based learning needs to be meaningfully contextualized. Students need to develop knowledge and skills in situated settings so that they are able to see the relevance of knowledge and skill acquisition in meeting real world needs (Brock 1992; Resnick 1987). These situated settings should be reflective of future responsibilities and duties a student might reasonably be required to undertake in future, career-oriented employment. Furthermore, teaching and learning the skills needed in high performance workplaces contribute to optimal learning because such a workplace is characterized by five principles that correspond to five principles of effective learning (Bailey 1997), as detailed in Overtoom (2000). (See Table 2.)

More and more employers recognize that highly skilled, adaptive knowledge workers who can blend technical and human relations abilities are their primary competitive edge. Job-specific technical skills are no longer sufficient as employers scramble to fill an increasing number of interdependent jobs (Overtoom 2000).

Since the work of the SCANS Commission, recent studies in Canada and Nevada have been successful in validating, updating, and regionalizing generic employability skills and competencies over time (Conference Board of Canada 2000; Richens 1999). The Conference Board of Canada revised an earlier list of essential competencies (McLaughlin 1995) and named them Employability Skills 2000+. They have created both an interactive Internet version of an Employability Skills Toolkit and a series of CD-ROMs targeted for different age groups: K-12, postsecondary, and adult learners (Overtoom 2000).

The Workplace Basic Skills (WBS) curriculum was developed by the School to Careers Professional Development Center (currently the Center for Workforce Development and Occupational Research) at the University of Nevada, Las Vegas, in response to the research conducted in Nevada (Richens 1999). This curriculum project was undertaken in response to the challenge that educational systems address the SCANS skills and competence needs identified by Nevada employers (Richens and McClain 2000). The WBS modules are designed to complement and enhance the learning experience through practical application. In the individualized format, learners move through exercises at their own pace once they master the competencies measured in the test materials of each unit. Some modules include capstone CD-ROM exercises featuring real problems found in the workplace.

The integration of employability skills into classroom curricula has been slow, but recent trends are encouraging. For instance, the North Central Association of Schools has initiated an optional Transitions Endorsement credentialing model to address one section of its four-part mission: "Provides standards and evaluation services for schools that ensure successful schooling transitions for its students" (Overtoom 2000). New York State has integrated SCANS into its Pathways design; Florida has the Sunshine State Skills; California, Texas, and other states have adopted the SCANS terminology.

Table 2: Correspondence between Principles of High-Performance Workplaces and Optimal Learning

High Performance Workplaces	Effective Learning Situations
Tasks and jobs are integrated through broad job definitions or cross-functional teams.	Knowledge and curriculum are integrated: head and hand, knowing and doing. Multiple opportunities for collaborative learning.'
Workers are given more initiative and take more responsibility.	Learning is a process of discovery rather than a dissemination of information.
Employees solve problems in nonroutine situations.	Deeper understanding is encouraged. This allows responses to stimuli the learner has not already encountered.
There is an emphasis on continuous improvement.	Focus on thought processes that generate learning rather than the "right answer."
Workers are expected to understand their functions within the context of the broader purposes of the organization.	New strategies call for learning in context.

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SCANS Implementation: The SCANS 2000 Center

The SCANS 2000 Center at the Johns Hopkins University has developed a systematic approach to help organizations implement programs that have SCANS as a central core. This approach was derived from experience working with various educational and training organizations over the past decade. The following are examples of seven types of organizations that are in various stages of applying SCANS:

A. Inner-city high schools
B. Academy programs in high schools
C. Internship programs for high school students enrolled in academy programs
D. Community colleges involved in technician programs
E. Training programs where unions are involved
F. Youth programs
G. Work-based programs for those moving from welfare-to-work

Each venue presents a different challenge and calls for a different response. The responses are described after a brief summary of the principles underlying the SCANS model and some of the tools that are available for implementation.

The SCANS 2000 Center believes the basic principles for building high-quality curricula for schools, colleges, and training programs are as follows (Packer and Brainard 2000):

1. Employ project-based learning
2. Meet both high academic (content) and SCANS (process) standards
3. Design the projects in the context of good careers
4. Have students work collaboratively
5. Have them use technology intensively
6. Assess the SCANS competencies systematically
7. Document results in a way employers value

Examples of state and local efforts to strengthen the connections between school and work were first featured in the 1993 SCANS publication ***Teaching the SCANS Competencies***. Lankard (1995) reviews several examples, which we revisit here. Among these efforts was the Critical Skills Foundation (Wheaton, Illinois). The foundation was formed to improve students' ability to apply critical skills in real-world business settings. The foundation developed two approaches to teaching critical skills. The SCANS-related field study projects have been conducted for various businesses in the community and have led to the development of a guidebook titled ***Field Studies and Applied Learning for High School Students***.

Other firms and organizations have used SCANS as a basis for their activities. ACT in Iowa, AES in Minnesota, and AlignMark in Florida have assessment products for use where SCANS is taught or needed on the job. San Francisco Community College has used SCANS for faculty development.

In much the same way, the SCANS 2000 Center at Johns Hopkins University developed different products and services for implementing SCANS. Recently, the center has integrated them into a complete process for training, developing, assessing, and certifying SCANS skills acquisition. The SCANS process consists of the following steps:

1. Consulting to define the challenges and opportunities
2. Embedding new educational materials in CD-ROMs
3. Identifying opportunities within existing curricula to help teachers create career-based projects
4. Providing teacher/supervisor professional development to improve project-based teaching and use of the SCANS tools
5. Developing assessment instruments to both guide and assess learning
6. Developing certification and an Internet-based SCANS system to maintain records of lifelong learning
7. Providing a database that schools and colleges can mine to obtain a skill profile of their graduates and firms can search to get a profile of their labor force

Implementers have used different tools in different combinations, depending on the context and requirements of each. The following matrix and subsequent narrative describe ways that implementers have built SCANS into curricula development and program design. Further, it shows how they have begun to implement the programs successfully.

Table 3: SCANS Implementation Matrix

	Use SCANS CD-ROM	Align Existing Curricula	Teacher Development	Supervisor Development	SCANS Assessment	Online CTS Repository
A. High Schools	X		X		X	
B. Career Academies		X	X		X	X
C. Internships				X	X	
D. Community Colleges	X		X		X	
E. Labor-Mgt Education		X	X		X	
F. Youth Opportunity Programs		X			X	X
G. Welfare to Work				X	X	

A. Baltimore City Public Schools System: Developing new curricula for existing courses in inner-city high schools

In 1995, Baltimore City received a $4 million Technology Challenge grant from the U.S. Department of Education to "Put School to Work on the Information Highway." The funds were used to acquire and install technology, provide professional development experiences for the teachers, and develop curricula. High school faculty and administrators formed the Baltimore Learning Community (BLC) to work with the SCANS Center to develop SCANS CD-ROM-based curricula that not only taught SCANS skills but also met high academic standards. The process for developing the modules was more involved than a typical curricular development effort.

The first step was to identify the learning objectives that the BLC teachers, the school system, and the sate wanted to achieve. The center and its partners relied on accepted academic standards ascertained by identifying the Maryland State Core Learning Goals (MDCLGs) for the classes and grade levels in which each "module" would be used. At the same time, in accordance with the basic principles for developing curricula, they situated the modules in industries where there are job openings and potential for careers. Starting with ninth-grade English and math, they decided to then develop a module anchored in the travel and tourism sector. Drawing on illustrative examples from the MDCLGs, they adapted grade appropriate requirements to develop a multiweek project that had internal consistency, real-world integrity and relevance to the students.

BLC teachers were integral in the design and idea generation phase. Once pieces of the module were developed, faculty reviewed them for language, content, and presentation. After the alpha version of the module was completed, the entire module was tested in the classroom by math and English teachers. Implementation was observed and these observations informed refinement of the modules and directed further content and resource development to support successful implementation.

Teachers are essential for success. They were trained in computer technology (such as Microsoft Office), the SCANS approach including collaborative learning, and how to assess students' demonstration of the SCANS competencies. Time was taken to work with faculty to revise lesson plans to integrate the modules into the regular class day in order to reduce issues of "coverage" and competing time requirements. Teachers received ongoing professional development and support as they continued to use the modules. This effort was highly successful. The program reduced dropouts by more than half, increased attendance, led to much higher grades (a GPA of 2.5 rather than 1.8), and the taking and passing of more college-track courses (Hamer and Aunio 2002).

B. National Academy Foundation (NAF): Aligning existing curricula

NAF is a national network of career academies that support the development of youth toward personal and professional success in high school, in higher education, and throughout their careers. NAF academies represent business/school partnerships that prepare young people for future careers through a combination of school-based curricula and work-based experiences. They have developed curricula for three types of academies: Finance, tourism, and information technology. These academies are typically schools within a school. There are nearly 600 NAF academies in 40 states and the District of Columbia.

The NAF board wants to award meaningful certification to their students. The purpose of this project was to include the SCANS skills in the academy content and certificate. SCANS Center consultants helped the teachers use the SCANS CD-ROM modules, providing an "off-the-shelf" project-based learning solution for interdisciplinary SCANS skill instruction. Teachers who taught subjects aligned to the current modules were trained for 3 days in project-based learning, collaborative learning, technology integration, and assessment of students' performance in the SCANS competencies.

Often, however, the NAF curriculum went beyond the content of the CD-ROM modules; for instance, NAF has students choose and follow stocks. In those cases, the center helped NAF faculty integrate SCANS skill instruction into their existing coursework. This included, first, finding opportunities to teach the SCANS skills within existing NAF Academy of Finance curricula. A SCANS Center trainer, working with NAF instructors, reviewed existing NAF curricula, identified SCANS learning opportunities in existing projects and, in some cases, suggested projects that would allow for SCANS skill development in the classroom.

In both instances assessing SCANS skills in the classroom was a focal point. Teachers were trained in using a SCANS-based performance assessment instrument. This instrument allows faculty to select any skill and assess it in the context of a task in a project. The assessment has generic, validated indicators for each skill that can be rated on a scale of one to five.

The output of the assessment goes into an online repository, the Career Transcript System (CTS), which captures information about skills mastery, academic achievement, certifications, and other competencies. In addition to capturing SCANS skills scores, the NAF faculty also insert students' grades earned in their NAF courses. Students can then print out a career transcript that accurately reflects the important learning they have demonstrated. The Career Transcript System can then serve as a repository for their lifelong learning, whether on the job or in the classroom. They can submit their career transcripts to employers as a substitute for, or addendum to, their resume.

Throughout their first semester of implementation, teachers received ongoing support from the center in the form of online communication and phone conferences. In addition, site visits were performed annually to check program implementation, provide additional instruction, and answer any questions that may have arisen.

C. National Academy Foundation (NAF): Assessing internship programs

NAF programs include a mandatory summer internship in the field of study. Because of the eminence of the national NAF board, Finance Academy programs have been able to obtain active local boards that provide the needed internships in banks, insurance programs and the like. Using the SCANS skills that were identified for development in the classroom activities, academy directors reinforced students' development of the SCANS skill by structuring summer internship activities around the same skills.

Working with those who supervise the interns at the jobs, the internships were profiled; job tasks were identified and critical SCANS skills were mapped to them. Supervisors were trained in the use of the same SCANS performance assessment that teachers used in their classrooms during the school year. Supervisors then coached

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and assessed the students on their skills mastery throughout the summer. This process reinforces not only skills development but also the notion that these skills are relevant and critical to career success. This also reinforces the perceived relevance of the academic content knowledge presented in the classroom.

D. The National Science Foundation: Supporting the development of community college curricula for technicians

Through its Advanced Technological Education (ATE), the National Science Foundation program has made the acquisition of SCANS skills a priority in the training and education of tomorrow's high-performance technicians. Historically, community college departments, and certainly those engaged in ATE instruction, have had industry advisory boards. Community college faculty, from physics, communications, and computer information design to statistical process (quality) control and linear programming, are well aware of their college students' need for the SCANS skills.

Working with community colleges across the country, the center developed five CD-ROM modules based on employer and educator input. As with the high school modules, the center worked with faculty. Each college asked their industry partners to provide real problems they faced. These problems became the basis for each of the five modules. For example, the initial design for developing a paperless engineering change order system module came from discussions that South Seattle Community College had with Boeing.

The development process was very similar to the high school module development. However, in this case subject-matter content was dictated by ATE's requirements that curricula focus on science, math, engineering, technology subject areas and be in the context of manufacturing or information technology. Faculty reviewed the modules throughout development for language, content, and presentation. After the first version of a module was completed, the entire module was tested in the classroom by faculty at different colleges. In some cases implementation was only observed; but in most, faculty and students were surveyed for suggestions, revisions, and reactions. This process informed improvements and identified additional content development requirements.

E. Joint Labor-Management Education Programs: Developing technical training programs for incumbent union workers

Joint labor-management education programs, funded by employer contributions, have implemented SCANS skill training. These employers and their unions recognize that development of incumbent workers increases their firm's competitive.

The center's efforts have included integrating SCANS skills into a training program for surgical technologists. The Consortium for Worker Education (CWE) is an organization supported primarily by labor unions. It trains up to 70,000 persons a year in New York City. The Health Care Institute (HCI) within CWE trains for surgical technology as well as other health care specialties. Similar to the academy programs, the center assisted HCI administrators in integrating SCANS skill instruction in their existing curricula. Working with program administrators, a SCANS trainer reviewed the textbook used by HCI instructors to identify SCANS learning opportunities. The center suggested scenarios to faculty so that they could develop SCANS skills in their surgical technician classrooms.

The center has also worked with administrators to align their "hands-on" activities to better reflect the process skill requirements of the SCANS taxonomy. In the process, the SCANS/HCI team identified opportunities to assess SCANS skills. Surgical technician training has a strong applied component, also known as "scrubs." Like with other medical field careers, surgical technicians must demonstrate competence in the operating theater setting in order to pass and be licensed. These moments are ideal SCANS skill assessment opportunities. The center worked with administrators to identify the seven critical skills to be assessed and provided them with the SCANS performance assessment to use. Because multiple scrubs are required, the assessment becomes a coaching devise as well. Discussions around performance can be concretely anchored to the performance indicators and skill demonstration.

F. Youth Opportunity Center: Improving programs for youth

The Youth Opportunity (YO) center in Baltimore, Maryland, has turned to SCANS skills as a way to enhance its content, improve youth outcomes, and increase retention of youth enrolled in the center and placed in jobs. The YO center serves out-of-school youth and is funded by a federal Youth Opportunity Grant.

The YO center seeks to emphasize the SCANS skills in several different areas. It will incorporate SCANS skills instruction in curriculum, use performance-based assessments, and work with employers and supervisors to incorporate SCANS skills instruction and assessment in internship opportunities. The center is currently working with the administrators to develop a SCANS course for the youth. This course will teach specific SCANS skills through group work, scenarios, role playing, and mini-projects.

All new youth enrolled in the YO center are enrolled in the SCANS Center project. The YO center will incorporate the SCANS taxonomy in a 6-hour orientation program they deliver to all newly enrolled youth. This provides an overview of the SCANS skills and how they are essential for success in the workplace. Those youth who are not work ready will be referred to a more intensive SCANS course.

The intake process includes not only routine data collection but also baseline assessment using a video-based assessment the SCANS Center developed with AlignMark, Inc. The assessment, titled Workplace Readiness Skills (WRS), asks for responses to multiple-choice questions based on video scenarios of appropriate workplace situations. Using the WRS results, an Individual Opportunity Plan is developed to guide the development of youths' SCANS skills and their other developmental needs. The assessment results are included in their CTS and serve as the baseline for their skills growth. The results of the WRS assessment are used to refer the youth to the SCANS class or other needed interventions.

When the young adults are work ready, they will be placed in an internship where they will be mentored by a job coach on how to use their skills in the workplace. They will also learn new occupational skills and will be assessed using the SCANS performance-based assessment.

G. Welfare-to-Work: Developing work-based programs for entry-level workers

The end of "welfare as we know it" was one of the most important changes in social policy in the previous decade. Aid to Families with Dependent Children (AFDC) was replaced by Temporary Assistance for Needy Families (TANF). Whereas the primary emphasis of AFDC was on cash payments to poor families, TANF, in contrast, requires that single parents go to work within a short time. The challenge facing TANF recipients is getting on the path to self-sufficiency. Typically, with lower skills and little work history, they have a difficult time finding and keeping jobs that can lead to careers. Working with welfare-to-work participants, TANF agencies and workplace supervisors, the SCANS Center developed SCANS-based workplace development interventions.

The implementers in this case were seven community colleges around the country. The center trained "workplace liaisons," hired by the community college. The liaisons helped supervisors and entry-level workers identify job tasks and the SCANS skills critical for performing them. Participants were either recruited from, or referred by, the local TANF agencies and One-Stops. Once deemed eligible, they were given a video-based assessment to determine their base competency in several SCANS skill areas (personal qualities and customer service). Based on their results they were forwarded to specific short-term interventions.

The workplace liaison, working with the job supervisor, profiled the job in which the participant was placed. This profile identified the five SCANS skills most critical for success in that job. Expectations about performance were then communicated and shared among all parties—the participant, the supervisor, and the liaison. All the TANF participants were then mentored, coached, and assessed on their skills mastery on the job.

This process not only reinforced skills development, but improved the often uneven relationship between supervisors and their workers. Through this periodic assessment, coaching, and review process, participants stayed in their jobs for about a year. They worked more hours and received pay raises that brought their earnings to almost the poverty line, for a family of three within their fifth quarter after enrolling in the program. The retention figures are likely to increase if follow-up continues, as almost two-thirds of the enrollees were still at the job when the data were collected (Abelev et al. 2002).

The previous examples show how SCANS has been implemented by classroom and workplace training and education programs. One program just getting off the ground promises much more sweeping impact and potential. Leaders in Orlando, Florida, are developing a community-wide approach to essential skills training. The Orlando Regional Partnership for Tomorrow's Workforce (O-Force) partners with business and education to develop a highly skilled and diverse work force to meet the needs of employers in Central Florida. Their core initiative, Project Prime Skills, seeks to better prepare the emerging work force of Central Florida for higher wage jobs through improved fundamental and soft skills training and education.

O-Force sees SCANS as the cornerstone of Project Prime Skills for their existing and emerging work force. Educational institutions from high school to community colleges to universities would use the SCANS Process to create an integrated community-wide learning system. These providers are the community's pipelines for skilled workers. O-Force envisions employers using the SCANS assessments for screening and placement in job training. The center is currently working with O-Force in their initial design phase to help them identify and select initial pilot sites for demonstration programs.

Conclusion

From about the age of 16 or so, young people start to think about their career futures with varying degrees of maturity. A few know with certainty what they want to do whereas others have yet to absorb the fact that they will have to work for a living. Most are in between. Many are asking ***Why Do I Have to Learn This?*** in the words of Dale Parnell's 1995 book. Parnell, who also authored ***The Neglected Majority*** (1985), has always championed contextual learning. As a member of the SCANS Commission, he quickly recognized that teaching the SCANS way could diminish the neglect of those in the middle range of achievement. Two other commissioners well known to the world of education joined him: Lauren Resnick and Tom Sticht.

Other members of the commission, including the heads of human resources at such companies as GE, IBM, and Motorola, affirmed the enduring and universal importance of these skills. The commission recommended the following to educators:

- Workplace know-how should be taught from kindergarten through college.
- Every student should complete high school sufficiently proficient in the SCANS know-how to earn a decent living.
- All federally funded programs for youth and adults, including vocational education, should teach the SCANS know-how.

The commissioners, very optimistically it turned out, asked for full implementation of these recommendations by the year 2000. Clearly, this has not happened. The commission underestimated how much had to be done before full implementation was feasible. They, like others, underestimated how difficult it is to change educational practice. The commission did not think that so many communities would have to, once again, ask employers what they wanted—as if the skills needed in one part of the country were so different from those needed elsewhere.

Pioneers, like the schools, colleges, and training programs mentioned in this paper, have taken some of the steps needed. Their efforts have led to the development of teaching, assessment, and recording tools. They have shown it can be done. Their experiences have generated some of the needed evaluations that "first followers" need before they are willing to take the plunge. It is now time for the first followers to move ahead.

Why do I have to learn this? Students need answers to Parnell's question. As he says, telling them "Because you may need it someday" is not satisfactory. Nor is it satisfactory to teach narrow vocational skills that are likely to become obsolete with the next wave of technological advance. Learning should be pleasurable and exciting, not painful and boring as it too often is. Students in these pilot programs are telling educators that they want this kind of education. They do not drop out of high schools that have successfully implemented SCANS and come back for more courses in colleges that use these techniques. They continue to learn on the job. Is not that what we all want?

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The following people are acknowledged for their critical review of the manuscript: Stanley J. Grossman, Executive Director, Maricopa Skills Center, Phoenix, Arizona; Greg P. Richens, Business and Marketing Education Consultant, Nevada Department of Education; and Christine Overtoom, a graduate student in the College of Education, the Ohio State University.

The work reported herein was supported under the National Dissemination Center for Career and Technical Education, PR/Award (No. VO51A990004) as administered by the Office of Vocational and Adult Education, U.S. Department of Education. However, the contents do not necessarily represent the positions or policies of the Office of Vocational and Adult Education or the U. S. Department of Education, and you should not assume endorsement by the Federal Government.

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